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U.S. Department of Defense



MHS MILITARY HEALTH SYSTEM



OCIO Office of the Chief Information Officer



HIMSS 2010 03 / 04 / 10

Protecting our Service Members as they Protect Us

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Chief Technology Officer
Defense Health Information Management System (DHIMS)
Falls Church, VA

Tuesday, March 4, 2010 10:00 – 11:00 pm HIMSS10 Annual Conference & Exhibition Georgia World Conference Center Atlanta, GA

Conflict of Interest Disclosure

MAJ Frank Tucker

Has no real or apparent conflicts of interest to report.

Session Objectives

- Objective 1: Understand the role that DHIMS plays in the Department of Defense, the Military Health System and in the military's medical community across the world
- Objective 2: Discern between the product lines making up the TMIP "family of systems" and how they are employed in a broad range of care delivery settings in the Theater
- Objective 3: Understand the latest developments to the electronic health record and the products that comprise the EHR that ultimately reach Service members in a Theater of Operations
- Objective 4: Demonstrate broad-based awareness of the plan of action for improving both the usability of the EHR and the effectiveness of the infrastructure supporting it

DHIMS Program Office

- Develops clinical information management applications for the Sustaining Base and extends those capabilities to the Theater of Operations
- Provides comprehensive health information technology solutions that seamlessly captures, manages and shares healthcare data for the U.S. Military's electronic health record (EHR)

"To provide a world class health information management system that seamlessly captures, manages and shares health information in support of the military's electronic health record for our Service Members, their families, Combatant Commands, and the user community"

Program Office Diversity of Skills

 Multi-disciplinary dedicated professionals (Military, Public Health Service, Government Civilians, and Contractors)

CLINICAL

- **■** Physician
- **■** Physician Assistant
- Nurses
- **■** Dentist
- **■** Dental Assistant
- Physical Therapist
- **■** Pharmacist
- Lab Officer
- Dietitian
- Optometrist
- Social Worker

ADMINISTRATIVE

- Medical Logistician
- Health Service Maintenance Technician
- Healthcare Administrator
- **■** Finance/Contracting
- StrategicCommunications

TECHNICAL

- Medical Information Systems Officer
- **■** Engineers
- **Information Assurance**
- Risk Management
- Quality Assurance
- Configuration Management
- **■** Architecture
- **■** Testers

Acquisition trained staff: PMP, ACQ Level I-III, CPHIMS

New England Journal of Medicine Article

"Very low levels of adoption of electronic health records in US Hospitals"

- "1.5% US Hospitals have a comprehensive electronic records system"
- "7.6% US Hospitals have a basic electronic records system"
- "17% US Hospitals have computerized providerorder entry for medications"

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Use of Electronic Health Records in U.S. Hospitals

Ashish K. Jha, M.D., M.P.H., Catherine M. DesRoches, Dr.Ph., Eric G. Campbell, Ph.D., Karen Donelan, Sc.D., Sowmya R. Rao, Ph.D., Timothy G. Ferris, M.D., M.P.H., Alexandra Shields, Ph.D., Sara Rosenbaum, J.D., and David Blumenthal, M.D., M.P.P.

ABSTRACT

BACKGROUND

Despite a consensus that the use of health information technology should lead to more efficient, safer, and higher-quality care, there are no reliable estimates of the prevalence of adoption of electronic health records in U.S. hospitals.

METHODS

We surveyed all acute care hospitals that are members of the American Hospital Association for the presence of specific electronic-record functionalities. Using a definition of electronic health records based on expert consensus, we determined the proportion of hospitals that had such systems in their clinical areas. We also examined the relationship of adoption of electronic health records to specific hospital characteristics and factors that were reported to be barriers to or facilitators of adoption.

RESULTS

On the basis of responses from 63.1% of hospitals surveyed, only 1.5% of U.S. hospitals have a comprehensive electronic-records system (i.e., present in all clinical units), and an additional 7.6% have a basic system (i.e., present in at least one clinical unit). Computerized provider-order entry for medications has been implemented in only 17% of hospitals. Larger hospitals, those located in urban areas, and teaching hospitals were more likely to have electronic-records systems. Respondents cited capital requirements and high maintenance costs as the primary barriers to implementation, although hospitals with electronic-records systems were less likely to cite these barriers than hospitals without such systems.

CONCLUSIONS

The very low levels of adoption of electronic health records in U.S. hos stals

of health care per-A policy strategy fohnical support staff is in U.S. hospitals.

CONCLUSIONS

The very low levels of adoption of electronic health records in U.S. hospitals suggest that policymakers face substantial obstacles to the achievement of health care performance goals that depend on health information technology. A policy strategy focused on financial support, interoperability, and training of technical support staff may be necessary to spur adoption of electronic-records systems in U.S. hospitals.

EHR – A National & Industry Challenge

- Pursued by both government, national and private entities for decades
- Each individual organization has had its own set of priorities and direction
- All have encountered similar challenges and road blocks that have limited EHR adoption



DoD's Healthcare Information Support for the Warfighter Mission

- Medical Situation Awareness for Command and Control
- Force Health Protection
- Medical Readiness
- Transient Patient Population
- Transient Healthcare Team
- Austere Environments
 - Theater Operations
 - Shipboard Operations
 - Medical/Aeromedical Evacuation
- Security Requirements
 - Secret Internet Protocol Router (SIPRNet)
 - DoD Information Assurance Posture
- DoD Acquisition Process
 - Interdependencies with other departmental programs



Understanding the Value of EHRs in the Department of Defense

Why we must do it

- Warfighter Mission
- Enables DoD's healthcare part of the Virtual Lifetime Electronic Record (VLER)
- Document and Monitor Wounded, III and Injured
- Enhanced Health Outcomes
- Cost Effectiveness
- Better Health Resource Management
- Health Community Satisfaction
- Patient Centric Medical Home
- Enhanced Access and Quality of Care
- Enhanced Patient Safety

Who we do it for



Service members,
Retirees, their families,
other beneficiaries, the
Military Health System
(MHS) community,
Operational Commanders,
and other stakeholders



What we will achieve

Right Information

- Comprehensive
- Integrated
- Interoperable
- Intuitive
- Accurate

Right Community

- Health Care Team
- Patients
- Commanders
- Veterans Affairs
- Nation (NHIN)

Decision Support for High Quality Cost Effective Healthcare

Right Place

- Global Presence
- Theater Operations
- Contingency Operations
- Austere Environments
- Mobile Operations
- Mature Communications

Right Time

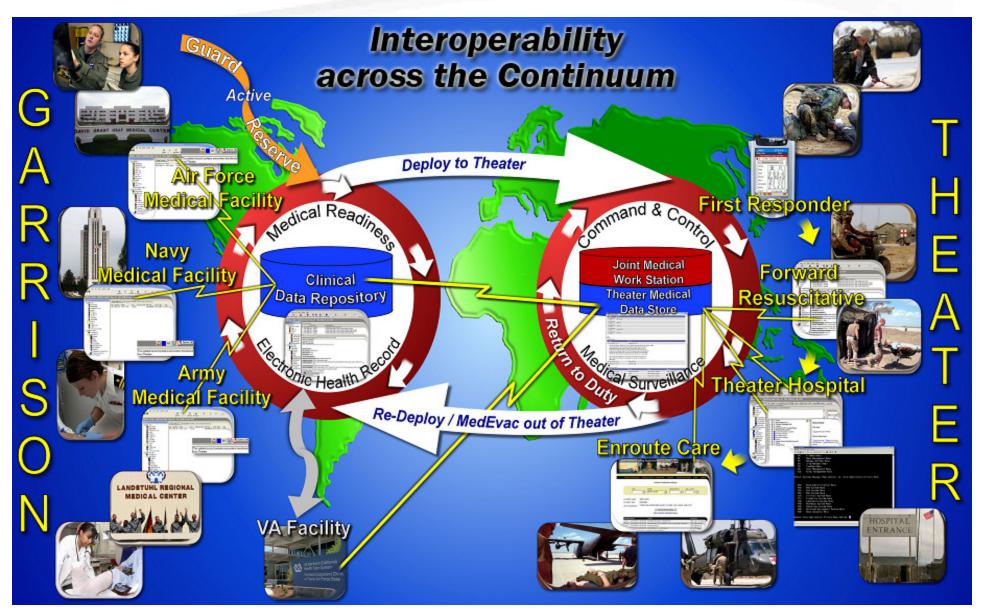
- Fast
- Dependable
- Clinical Workflow
- Highly Available
- Time to Market
- Innovative

AHLTA-Theater (Block 2 Release 1)

- Extends the sustaining-base electronic medical record (AHLTA) capability, look and feel to the Theater of Operations
 - Outpatient/Inpatient encounter documentation
 - Can work in a <u>low and no communication environments</u> (store and forward)
 - Interfaces with SAMS, TC2 and AHLTA-Mobile
 - Bed and Order Management
 - Theater Admin/Theater Security (create clinics and manage users)
 - Able to import patient demographic data from Authoritative Data Source
 - Drug-Drug/Drug-Allergy interaction screening
 - Alternate Input Method



Continuum of Care



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DoD EHR Family of Systems

AHLTA-Garrison Outpatient Documentation

- Covers every time zone
- 77,000+ active users
- 110,000+ end user devices
- 148,000+ new encounters daily
- 9.5+ million beneficiaries with clinical data
- 50+ Terabytes (mostly non-image)
- White House Medical Unit

Supporting <u>transient</u> patient populations and <u>transient</u> healthcare teams

Essentris® Inpatient Documentation

- 29 Sites
- 62% MHS Inpatient Beds
 - 90% of Beds by FY2011

AHLTA-Theater (As of 31 Nov 2009)

- 15 Theater Hospitals, 262
 Forward Resuscitative sites
- 11 U.S. Naval Ships
- 8.19 million orders of ancillary services (laboratory, radiology, pharmacy)
- 2.99 million outpatient encounters captured in AHLTA-Theater

AHLTA-Theater is...

Documenting at Point of Injury



Documenting in Theater



Documenting Onboard Ships



Documenting In-Transit & In-Air





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AHLTA-Theater Family of Systems

- Customizes Garrison-based AHLTA EHR capabilities to deployed medical units
 - Same look and feel as Garrison
 - "Train as you fight"
- Enables complete clinical care documentation, medical supply and equipment tracking, patient movement visibility and health surveillance in Theater environments (low/no communications)
- Data is consolidated into a single database known as the Theater Medical Data Store (TMDS)
 - Data is then transmitted to the Clinical Data Repository (CDR) to provide <u>secure worldwide</u> access to Service members' health records

AHLTA-Mobile (Block 2 Release 1)

 DoD's enterprise-wide first responder tool intended to support medical documentation at point of injury

Mobile handheld platform

Point of injury documentation

- Automated medical coding
- Medical reference
- Clinical decision support
- Feeds AHLTA-Theater
- Enhanced data mapping and data availability in **AHLTA-Theater**



Government

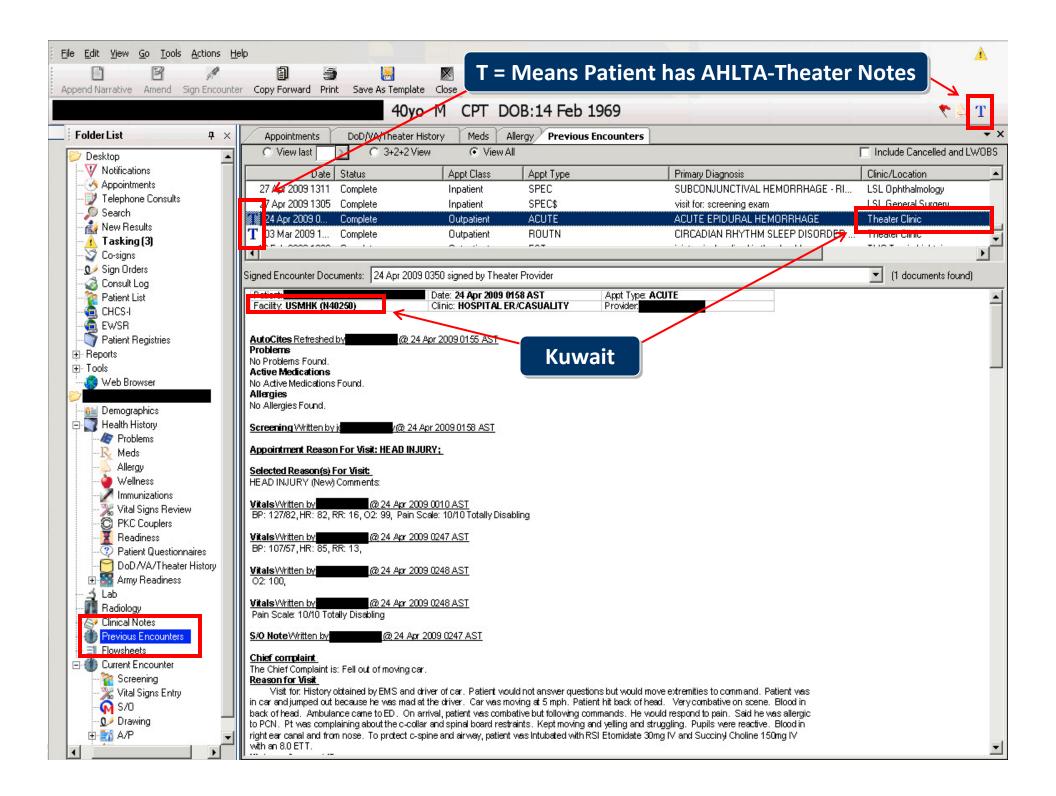
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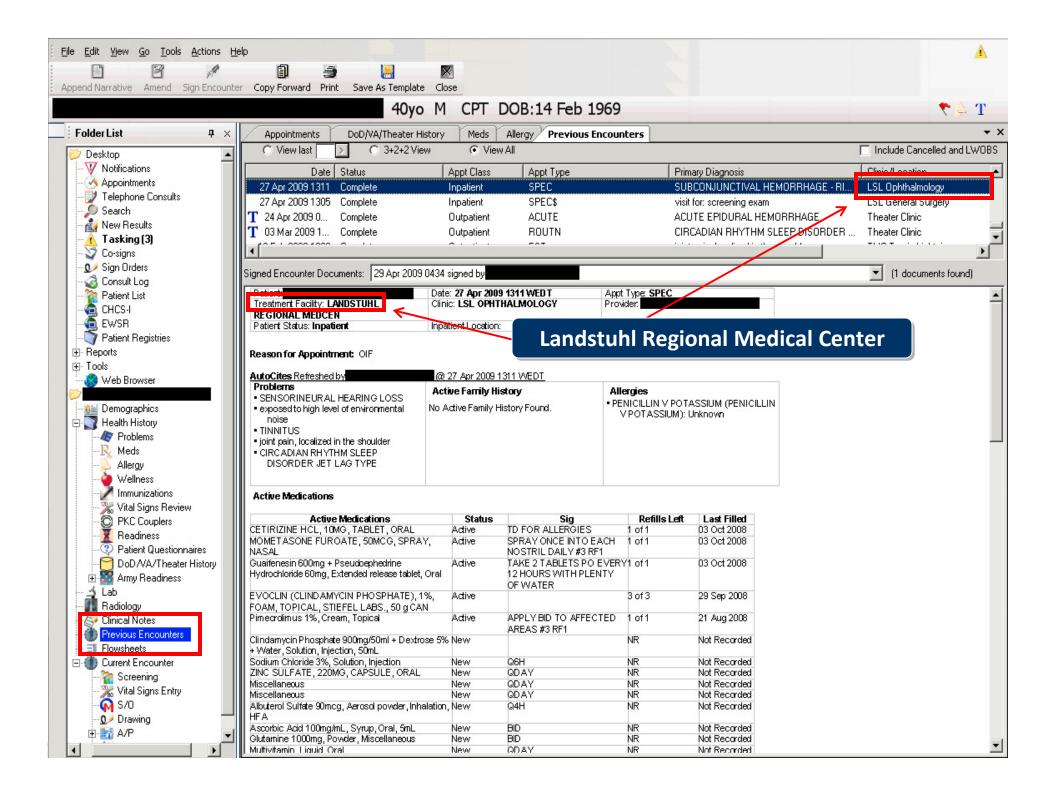
Mention for Achievement

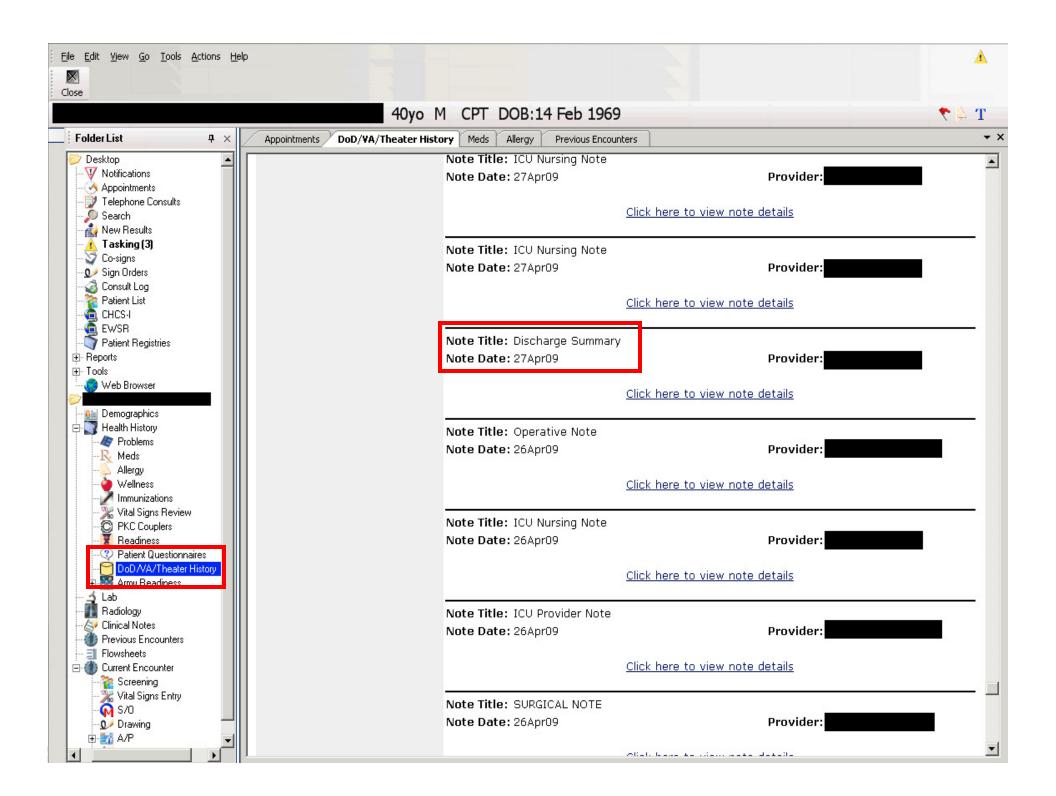
in Government

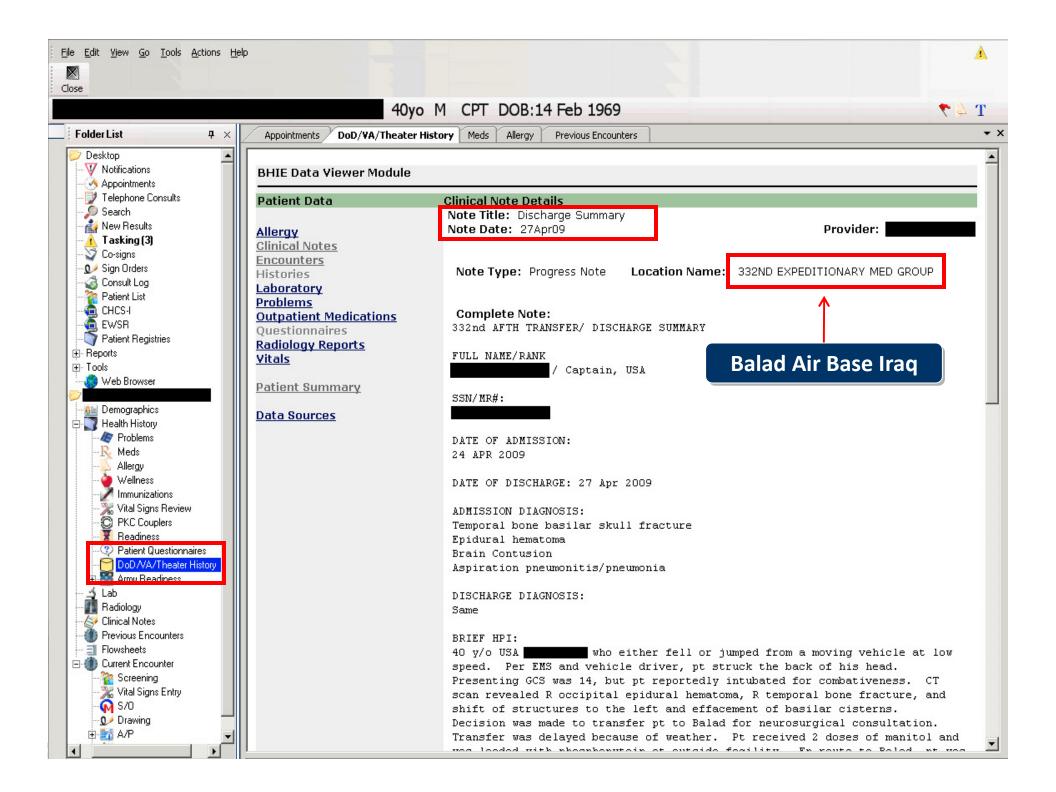
Theater Medical Data Store (TMDS)

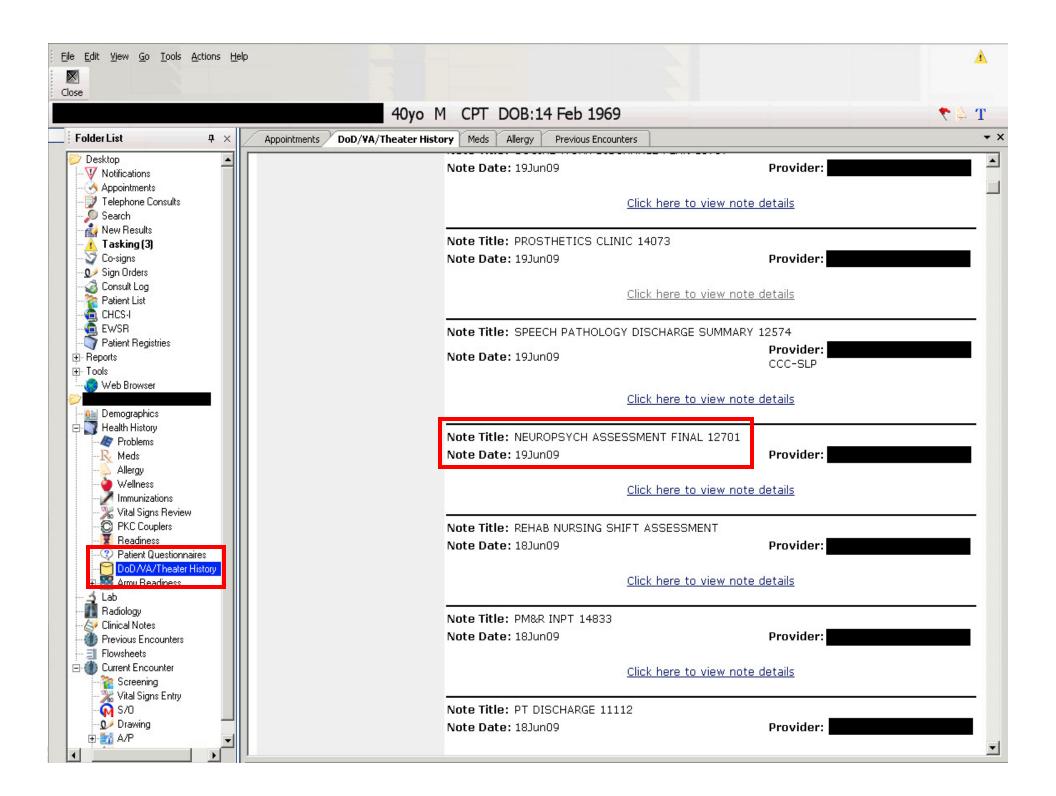
- Collects medical information from Theater health systems and shares the data with the home station
 - Outpatient and inpatient health record
 - Ancillary Services (e.g., laboratory, radiology and pharmacy)
- Patient Tracking and In-Transit visibility
- Shares Theater health history with the VA to support continuity of care
- Interface for benefits assessment (e.g., combat injury pay and Veterans Affairs)
- Shares information with command and control systems for medical situation awareness
- Leverages Web technologies

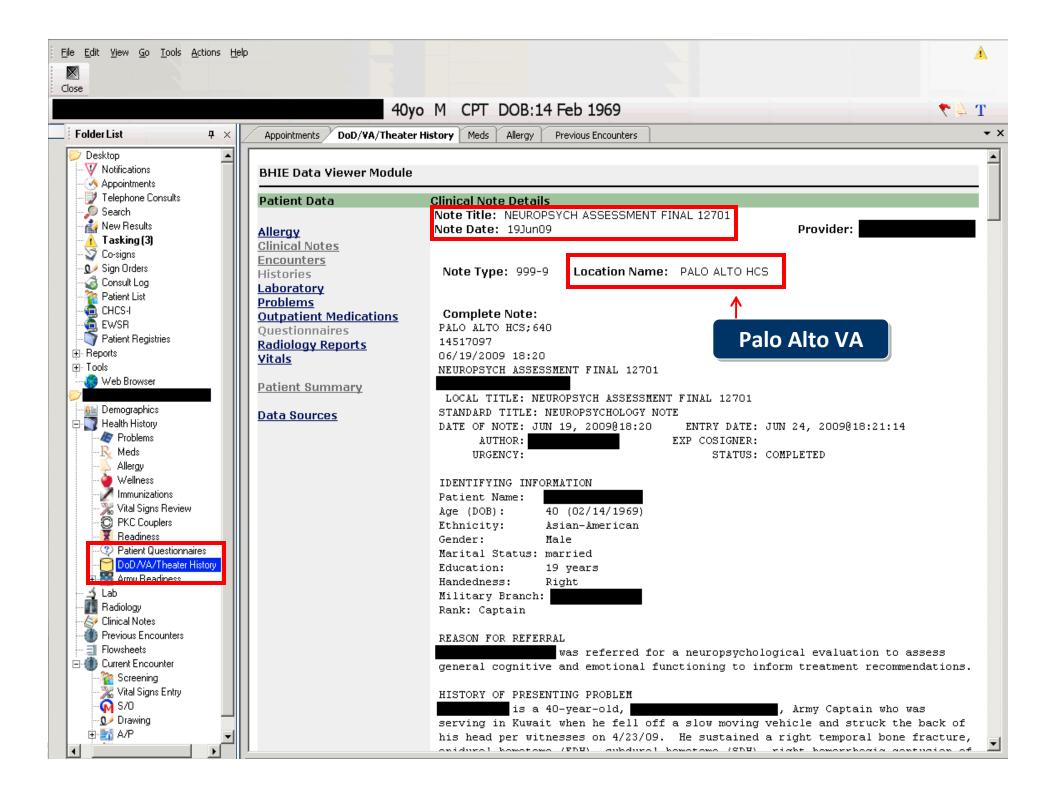


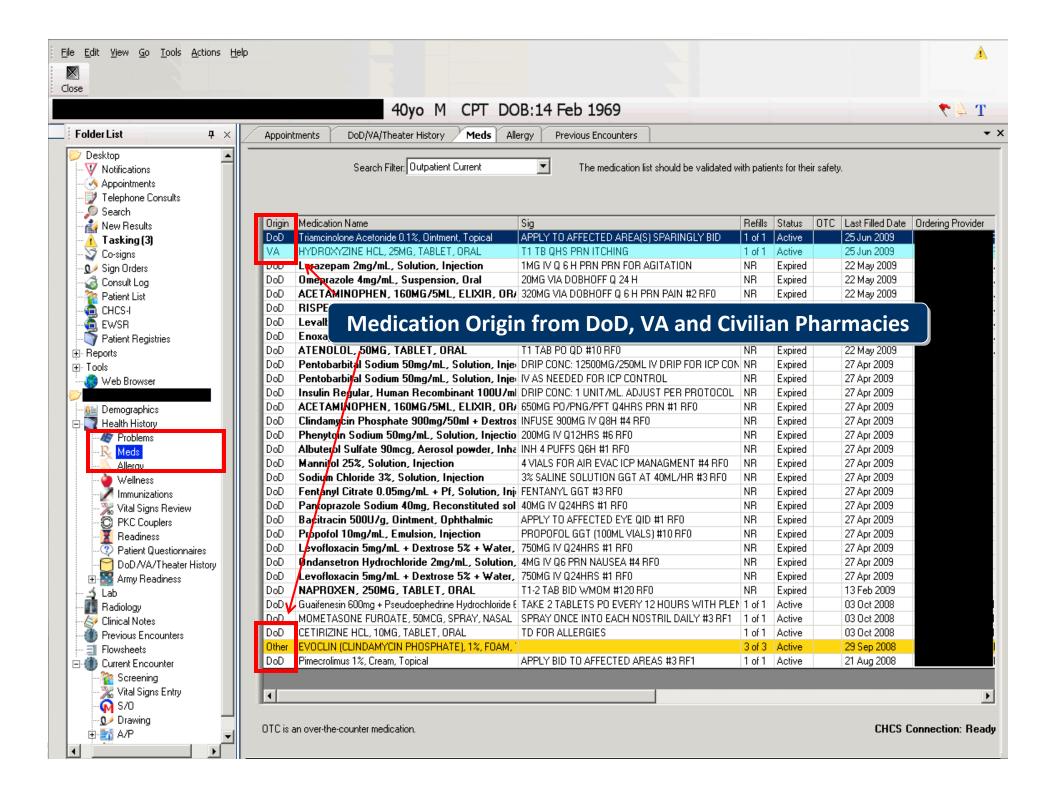


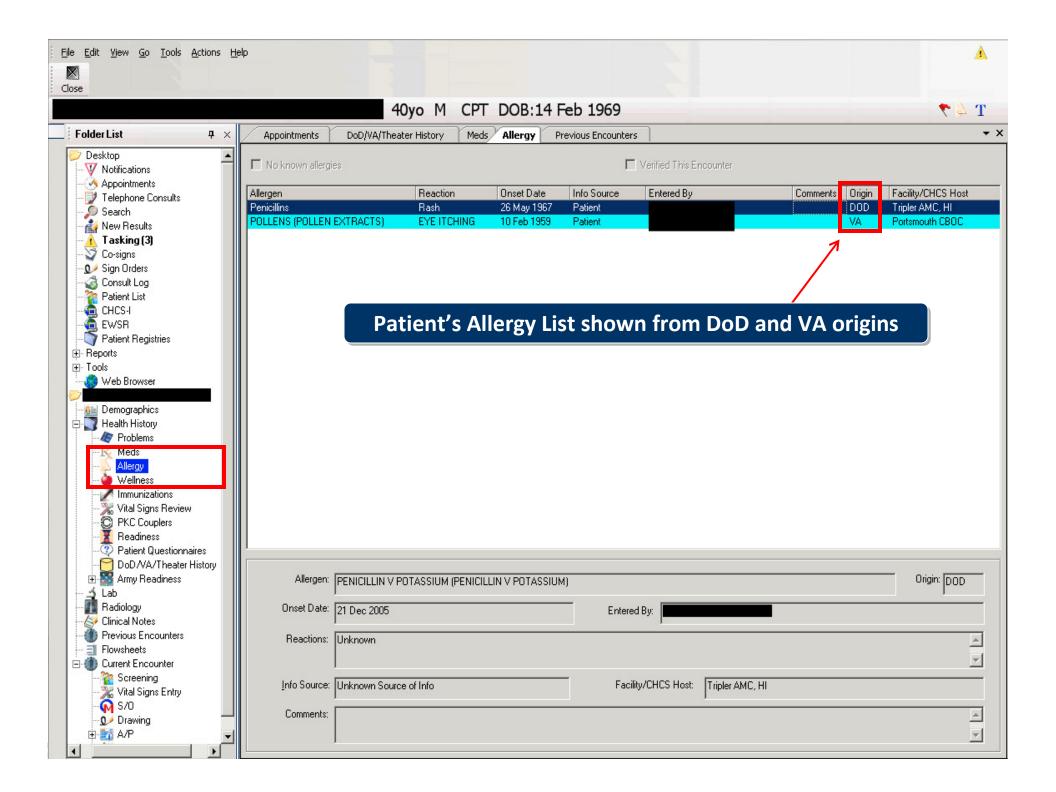












Current DoD/VA Health Information Exchange

DoD

Data on Shared Patients

- Current Viewable Data
 - Outpatient pharmacy data, laboratory and radiology results
 - Inpatient laboratory and radiology results
 - Discharge summaries (26 sites = 61% of DoD inpatient beds)
 - Inpatient consultations, operative reports, history and physical reports, transfer summary notes, initial evaluation notes, procedure notes, evaluation and management notes, pre-operative evaluation notes, and post-operative evaluation and management notes (26 DoD sites - available to all DoD providers and VA providers in the Puget Sound area)
 - Allergy data
 - Theater clinical data: Theater inpatient notes, outpatient encounters, and ancillary clinical data
 - Ambulatory encounters, procedures, and vital signs
 - Family, social, and other history, and questionnaires
- Current Computable Data (limited sites) enables drug-drug and drug allergy safety checks and alerts
 - Pharmacy data
 - Allergy data
- · Planned additional viewable data exchange
 - Inpatient data from additional DoD sites in FY 2010

Data on Separated Service Members

- · Outpatient pharmacy data, lab and radiology results
- · Inpatient laboratory and radiology results
- Allergy data
- Consult reports
- · Admission, disposition, transfer data
- Standard ambulatory data record elements (including diagnosis and treating physician)
- Pre-/post-deployment health assessments
- Post-deployment health reassessments

Data on OIF/OEF Polytrauma Patients

- Radiology images
- · Scanned medical records

Cumulative

As of 12/16/09

Two-way, on-demand view of health data available in real-time

Bidirectional Health Information Exchange Live data flow beginning 2004; data from 1989 forward

Viewable data exchange between all DoD and VA medical facilities as of July 2007

One-way, monthly transfer of health data

Federal Health Information Exchange Live data flow beginning 2002; data from 1989 forward

> Health data on more than 5.0 million Service members

One-way transfer of health data initiated at time of decision to transfer

Live data flow beginning March 2007

From Walter Reed AMC, Bethesda (NNMC), and Brooke AMC

VA

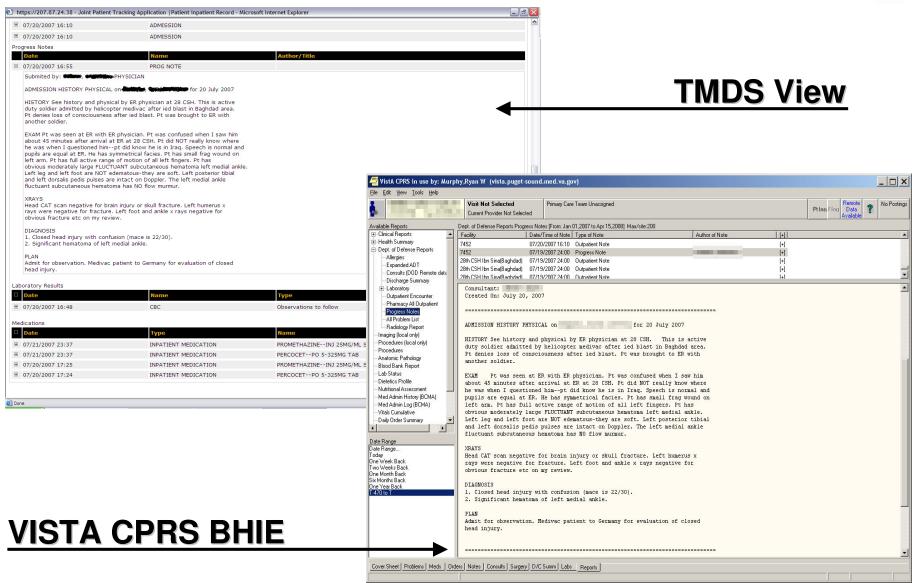
All VA Medical Facilities

- 3.5 million correlated patients, including
 1.6 million patients not in FHIE repository
- 76,950 average weekly FHIE/BHIE queries 4th Qtr FY 2009
- Computable pharmacy and allergy exchange on more than 47,900 patients
- · 75.9 million lab results
- 12.4 million radiology reports
- 78.2 million pharmacy records
- 85.9 million standard ambulatory data records
- 3.5 million consultation reports
- 2.7 million deployment-related health assessments on more than 1.2 million individuals

4 VA Polytrauma Centers (Tampa, Richmond, Minneapolis, Palo Alto)

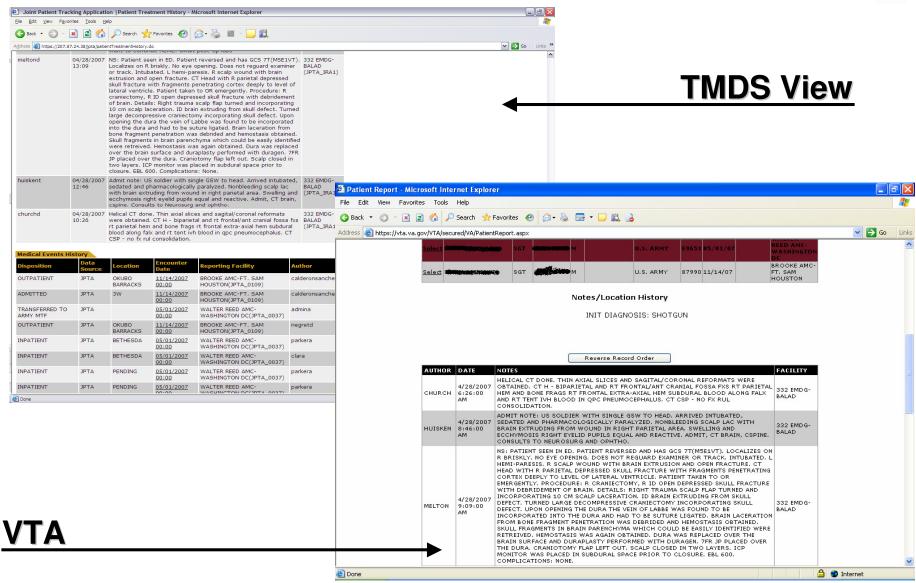
- Radiology images for more than 215 patients
- Scanned records for more than 290 patients

TMDS-VISTA CPRS BHIE Theater Clinical Data Sharing

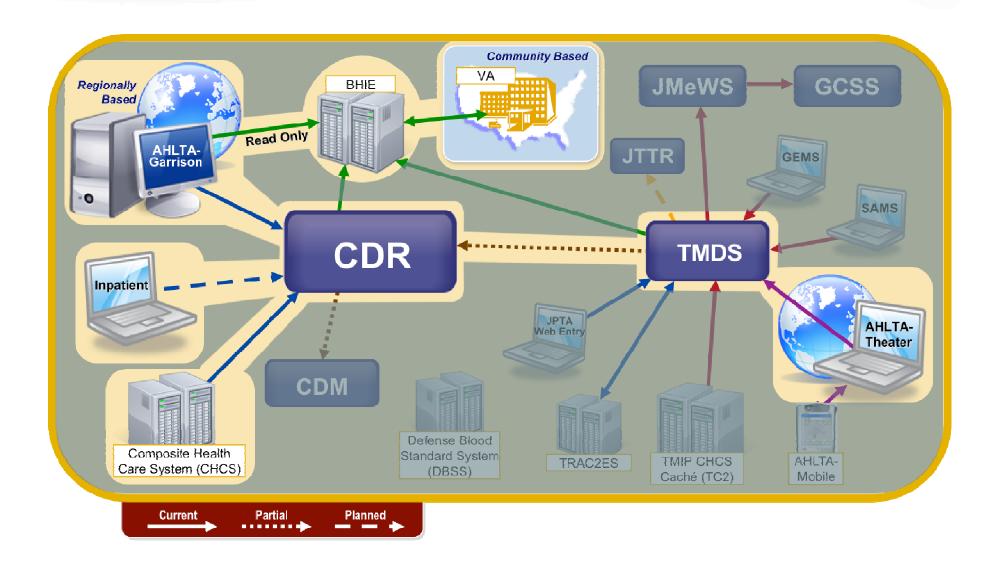


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TMDS-VTA Tracking and Treatment Data Sharing



Medical Data Integration: Today



Potential Civilian Uses

- Natural Disaster Support
- Humanitarian Assistance
- Pandemic Outbreaks
- Rural Health Care
- Visiting Nurse Services
- Public Schools



White House Medical Unit (WHMU)

- WHMU serves both the President, Vice President, their families and provides emergency coverage to White House visitors and guests
- Providers use AHLTA-Theater Remote and AHLTA-Garrison Remote
- Access military's EHR and the Composite Health Care System (CHCS) through a remote connection with the Bethesda Naval Hospital
 - CHCS enables DoD providers to electronically perform patient appointment processes and scheduling, order laboratory tests, retrieve test results, authorize radiology procedures and prescribe medications
- DHIMS continues to provide training and on-site support

DoD Electronic Health Record - Strategy

Stable Comprehensive Enhanced Health Care Record

so Enhance Care

Ability to continuously improve the quality and efficiency of health care administered to our beneficiaries

Mig Zorn

Near Yorm

Comprehensive

Stable Comprehensive Health Care Record

One-stop point for providing, viewing and maintaining a complete longitudinal health care record

Stable Health Care Record

Efficiently perform their duties in a timely manner, regardless of location, time of day or network issues

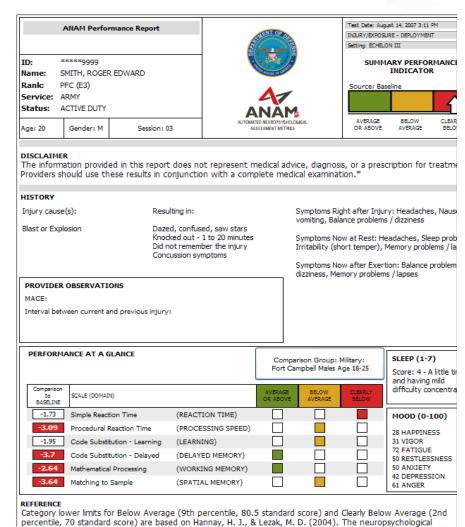
Stabilize

Speed, Reliability and User Interface

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Neurological Cognitive Assessment Tool (NCAT)

- Automated Neurological Assessment Metrics (ANAM) is a tool to the support diagnosis and monitoring patients of mild traumatic brain injuries (mTBI)
- Compare results across time periods
- Track and trend TBI data
- Supports research to improve patient outcomes
- Operates in Theater and Garrison



examination: Interpretation. In M. D. Lezak, D. B. Howieson, & D. W. Loring (Eds.), Neuropsychological Assessma

*C-SHOP and the University of Oklahoma are not responsible for any decisions made based on information contain in the report. The provider has the sole responsibility for establishing diagnosis and suggesting appropriate treatr

(pp. 133-156). New York: Oxford University Press.

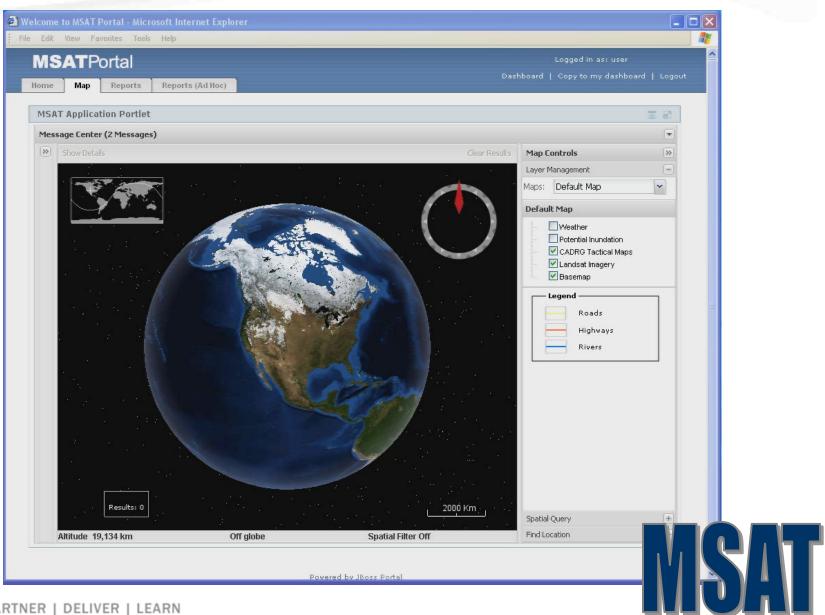
Imaging Initiatives

- Healthcare Artifact and Image Management Solution (HAIMS)
 - Three-phased approach to provide global access and global awareness of <u>scanned documents and</u> <u>referential images</u> generated during healthcare delivery
 - Phase I scan, import, register, search, view, edit and store various documents and images
- Deployable Tele-Radiology System (DTRS): Theater Imaging
 - Serves as the Theater's <u>Picture Archiving and Communications System</u> (PACS)
 - Provides healthcare providers in OIF/OEF access to diagnostic radiographic images

Virtual Lifetime Electronic Record (VLER)

- On April 9, 2009, President Obama directed DoD and VA to create a Virtual Lifetime Electronic Record that:
 - "will ultimately contain administrative and medical information from the day an individual enters military service throughout their military career and after they leave the military."
- The goal of VLER is to provide a single portal for the seamless access to all of the electronic records for Service members as they transition from military to veteran status and throughout their lives
 - No veteran should experience delay in access to services they earned while serving their country because of red tape and paperwork

Medical Situational Awareness in the Theater



Points of Contact

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 - POC at TPS: X
- Federal Health Sector and Lessons Learned
 - POC: Ms. Lois Kellet at Lois.Kellet@tma.osd.mil

Closing Slide

For more information visit DHIMS at:

Booth #3107 in Hall C

or on the Web at:

dhims.health.mil